

### **REMARKS/ARGUMENTS**

Claims 8, 26, 29, and 30 have been amended. Claims 16-23 have been canceled. Claims 42-49 have been added as new. Therefore, claims 1-15 and 24-49 are pending in the application.

#### **I. Rejections based on 35 U.S.C. § 112**

In response to the rejections made under 35 U.S.C. § 112, second paragraph, the applicant has amended claims 29 and 30 to depend on claim 25. This amendment provides the antecedent basis for the “shutter assembly.”

#### **II. Rejections based on 35 U.S.C. § 102**

Claims 8, 10, 24, 26, 33, 35, 37, 38, and 40 were rejected under 35 U.S.C. § 102(b) as being anticipated by the DCL reference (RPT24 Rotary Product Trimmer RPT-1001) provided by the applicant.

Claim 8 has been amended to clarify that the upper portion (35) of the impeller (10) is a “vane-less” feature formed to direct bulk material to the vanes (37) of the lower portion (36). This is an important distinction from the cited DCL reference, because the pellets of the bulk materials are caused to change direction upon contacting the guiding surface (38). This explanation is provided extensively in the specification at page 10, lines 22-23, through page 11, lines 1-7, and is best illustrated at Figures 4A, 5A, and 5B. Further explanation of the two-fold importance of the vane-less guiding surface (38) is provided at page 12, lines 1-17. First, the power requirement to achieve a desired trajectory and discharge velocity is *reduced*, because a horizontal velocity component has been imparted by virtue of the reaction between the guiding surface (38) and the material. Second, the vane-less guiding surface (38) allows use of vanes (37) that are shaped to minimize collisions between particles that have been impacted by an

impeller vane (37) and particles that have yet to be impacted, while also maintaining a reasonably small range of tangential velocities of the impeller vane (37) within the expected impact region. Consequently, claim 8 is both novel and nonobvious in comparison to the DCL reference.

In contrast with claim 8, the cited DCL reference includes an impeller which has vanes extending across almost the entire height of the inverted cone base, and which also protrude *substantially past* the inverted cone. Thus, material falling from the DCL device is *immediately* contacted by the impeller vanes. The disadvantages to the DCL design are that: (a) more power is required from the motor, and (b) deflection angles of the material are substantially less than ideal. The end result is that the DCL device is incapable of throwing material to the farthest extents of a container, and it cannot achieve the fill efficiencies of the present invention.

Claim 10 is dependent upon claim 8 and includes the further limitation of a level sensing means below the impeller. Therefore, claim 10 is also novel in comparison to the DCL reference.

Claim 24 in its original language is both novel and nonobvious in comparison to the DCL reference. Specifically, this claim requires that the level sensing means sense the level of material “when said bulk material in said container is at a predetermined height *above an operative level* of said level sensing means.” As shown in Figures 4A and 4B, and as explained in the specification at page 9, lines 22-24, through page 10, lines 1-8, the level probe (50) is protected within a well (51), and material can only contact the level probe (50) when it spills through an inlet port (52) *above* the operative level of the probe (50). Thus, the present invention stops when the material level is actually *above or higher than the probe* (50). This design is in sharp contrast to the DCL reference, because the level probe on that device is completely exposed (See Section B-B, adjacent to impeller). Therefore, in the DCL reference,

the device stops when the material is at *the level of the probe*. For the above reasons, claim 24 is both novel and nonobvious in comparison to the DCL reference.

Claim 26 is dependent upon claim 24 and includes the further limitations related to the novel impeller. Also, claim 26 has been amended to clarify that the upper portion of the impeller includes a “vane-less” guiding surface, for the same reasons provided with respect to claim 8. Therefore, claim 26 is also novel and nonobvious in comparison to the DCL reference.

Claim 33 is dependent upon claim 24 and includes the further limitations related to the level probe as a distinct form of the level sensing means. Therefore, claim 33 is also novel and nonobvious in comparison to the DCL reference.

Claim 35 is dependent upon claim 33 and includes the further limitations related to the level probe being contained within a well having an inlet port and a bottom opening. However, DCL only depicts a “cage” (as opposed to a well) which has no “inlet port” or “bottom opening” as claimed, and the DCL cage cannot function in the manner required in the parent claim 24. Both of the probes in DCL are still completely exposed to the material whenever the material level is at the probe height. Therefore, claim 35 is also novel and nonobvious in comparison to the DCL reference.

Claim 37 is an independent claim which contains an identical limitation with respect to the level sensing means of claim 24. Specifically, in contrast to the DCL reference, the level sensing means detects material when the container level is at a predetermined height *above an operative level* of said level sensing means. Consequently, claim 37 is both novel and nonobvious in comparison to the DCL reference.

Claim 38 is dependent upon claim 37 and includes the further limitations related to the level probe as a distinct form of the level sensing means. Therefore, claim 38 is also novel and nonobvious in comparison to the DCL reference.

Claim 40 is dependent upon claim 38 and includes the further limitations related to the level probe being contained within a well having an inlet port and a bottom opening. As explained previously with respect to claim 35, DCL only depicts a “cage” (as opposed to a well) which has no “inlet port” or “bottom opening” as claimed, and the DCL cage cannot function in the manner required in the parent claim 37. Both of the probes in DCL are still completely exposed to the material whenever the material level is at the probe height. Therefore, claim 40 is also novel and nonobvious in comparison to the DCL reference.

### III. Rejections based on 35 U.S.C. § 103

#### A. DCL in view of Krambrock

Claims 1-5, 9, 11-13, 25, and 28-30 were rejected under 35 U.S.C. § 103(a) as being unpatentable over DCL in view of Krambrock (US 5,660,215).

The combination of DCL in view of Krambrock is not sufficient to support a prima facie rejection based on obviousness. The only function in common between DCL and Krambrock are that they dispense material; otherwise they are completely different from one another. DCL is an impeller-driven device which disperses material that comes in to contact with its impeller. The impeller is driven by a motor located below the level that material is dispersed. In contrast, Krambrock is not an impeller-driven device, but rather simply permits material to fall through its outlet opening (12). A cable and pulley system (17, 18) is used to raise and lower a “deflection body” (14) which opens or closes the opening (12). Krambrock lacks a “shutter assembly

operatively connected between said motor housing and said upper casing assembly,” because Krambrock has no motor.

It is also impossible and nonsensical to modify DCL by Krambrock. For example, if DCL were modified by the disclosure of Krambrock, then such an attempt would essentially impose a flow control at the impeller level of DCL where *none is required*, because flow control in DCL is handled at a location far above the device. Most importantly, there is no apparent way to implement the central cable and pulley system of Krambrock through the impeller and motor of DCL, unless one were to completely redesign one or both devices, i.e. undue experimentation. Even then, it is not clear at all how such a system could be designed (or why such a design would even be desired). Consequently, the proposed combination of DCL and Krambrock does not disclose or suggest the invention as claimed in claim 1.

Claims 2-7 are dependent from claim 1 and include limitations further distinguishing the invention from the cited combination. Therefore, claims 2-7 are also nonobvious in comparison to the combination of DCL in view of Krambrock, irrespective of the other bases upon which those claims have been rejected elsewhere in the Office Action.

Claim 9 was rejected on the same basis as claim 1, namely the proposed combination of DCL in view of Krambrock. For the same reasons as explained above, the cited combination fails to teach or suggest the invention of claim 9, because there is no feasible way to combine the “deflection body” of Krambrock with DCL. Therefore, claim 9 remains nonobvious in comparison to the cited references.

Claims 11-15 are dependent from claim 9 and include limitations further distinguishing the invention from the cited combination. Therefore, claims 11-15 are also nonobvious in

comparison to the combination of DCL in view of Krambrock, irrespective of the other bases upon which those claims have been rejected elsewhere in the Office Action.

Claim 25 was rejected on the same basis as claims 1 and 9, namely the proposed combination of DCL in view of Krambrock. For the same reasons as explained above, the cited combination fails to teach or suggest the invention of claim 25, because there is no feasible way to combine the “deflection body” of Krambrock with DCL. Therefore, claim 25 remains nonobvious in comparison to the cited references.

Claims 28-32 are dependent from claim 25 and include limitations further distinguishing the invention from the cited combination. Therefore, claims 28-32 are also nonobvious in comparison to the combination of DCL in view of Krambrock, irrespective of the other bases upon which those claims have been rejected elsewhere in the Office Action.

B. DCL in view of Krambrock and Gentilcore

Claims 6, 7, 14, 15, 31, and 32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over DCL in view of Krambrock (US 5,660,215) and further in view of Gentilcore (US 5,052,451).

Each of the above rejected claims are nonobvious in comparison to the above cited combination based on the reasons explained above, because they are dependent upon claims which are themselves nonobvious (namely claims 1, 9, and 25). The addition of Gentilcore to the cited combination does not help to make the DCL-Krambrock combination any more feasible or desirable, because all that Gentilcore adds is a lifting flange for a dust control apparatus. Therefore, claims 6, 7, 14, 15, 31, and 32 should also be allowable over the cited combination.

C. DCL in view of Felix

Claims 16, 18, and 27 were rejected under 35 U.S.C. § 103(a) as being unpatentable over DCL in view of Felix (US 3,469,718).

Claims 16 and 18 have been canceled. With respect to claim 27, that claim is based on claim 24, which is discussed earlier in this response as being novel in comparison to DCL. Felix depicts non-zero angle (helical) vanes (64), although such vanes are fixed into position on a static “skirt member” (63). Therefore, such features cannot readily be combined with the impeller as described and claimed in the applicant’s invention.

D. DCL in view of Krambrock and Felix

Claims 17 and 19-21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over DCL in view of Krambrock and further in view of Felix.

Claim 17 and 19-21 have been canceled, thereby obviating the need for further discussion of these claims.

E. DCL in view of Krambrock, Felix, and Gentilcore

Claims 22 and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over DCL in view of Krambrock and further in view of Felix and Gentilcore.

Claim 22 and 23 have been canceled, thereby obviating the need for further discussion of these claims.

F. DCL in view of Cherek

Claims 34, 36, 39, and 41 were rejected under 35 U.S.C. § 103(a) as being unpatentable over DCL in view of Cherek (US 5,748,562).

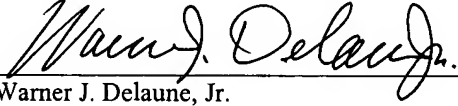
Claims 34 and 36 are ultimately dependent upon claim 24, and claims 39 and 41 are ultimately dependent upon claim 37. Both claims 24 and 37 should be allowable for the reasons expressed earlier in this response with respect to their novelty over the DCL reference. However, both claims 24 and 37 are also nonobvious over the cited combination, because there is nothing in the combination to teach or suggest that the level probe can be (or should be) mounted in such a fashion as to detect material when it is at a level *above* the operative level of the probe.

In addition, claims 36 and 41 both claim that the level probe is detachably mounted by a set screw. Contrary to the cited combination, Cherek fails to disclose that the level probe is mounted by a set screw (54), as described in the applicant's specification at page 9, lines 6-21, and shown in Figure 4B. Rather, the level probe in Cherek appears to be threadably attached via a screw (8) vertically aligned with the probe (4). The applicant's use of a set screw for the level probe mount enormously simplifies the task of removing and adjusting the level probe, and Cherek does not afford the ability to perform any such tasks in such a simple, straightforward, and quick manner. Therefore, claims 36 and 41 should be regarded as nonobvious over the cited combination.



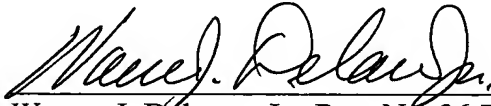
IV. Conclusion

For the reasons expressed herein, the applicant respectfully requests that a timely Notice of Allowance be issued in this case. If the Office believes that there remain any impediments to such a Notice of Allowance, the undersigned would welcome a telephone call to resolve such issues as quickly as possible.

CERTIFICATE OF MAILING
I hereby certify that this correspondence is being sent via first class mail, U.S. Postal Service, postage prepaid and properly addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450:
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